Scholar’s Porch

My major research hypothesis is, “There is a significant relationship between Black public school children whose teachers rarely look like them and the comparatively low percentage of young Black people who aspire to or become educators or professionals in the City of New York.” In this hypothesis, the independent variable (x) is, “Black public school children whose teachers rarely look like them.” Meanwhile, the dependent variable (y) is “The comparatively low percentage of young Black people who aspire to or become educators or professionals in the City of New York.” The question of “what statistical tests” will be used in connection with the stated hypothesis is another way of asking what research instruments will be used to set up the “theorical framework” for the research? Among several considerations I have made for research instruments, “Pearson Product Moment,” will definitely be one.

Pearson Product moment is one of the most commonly used statistical tools to measure whether or not a “significant relationship” exists between two variables. The words, “significant relationship,” together, are actually a substitute-phrase for “correlation”. When statisticians use the Pearson formula

 r $= NΣxy-(Σx)(Σy)$ .

 $√[NΣx\^2-\left(Σx\right)\^2][NΣy\^2-\left(Σy\right)\^2]$

to determine how strong a correlation exists between the x and y variables, they are trying to determine to what extent is y a function of x. So, by plugging the pair of variables from thirty or more samples into the equation, the result that comes out—“correlation coefficient (r)”—will fall in the interval of the set -1< 0< 1. If the correlation coefficient is r =1 the relationship between the two variables is 100% (an absolute certainty). Most statisticians tend to treat a correlation coefficient of r $\geq $.5 (a correlation of 50%) as indicative of a significant relationship. But still, the relationship between the two variables need not be positive. And as such, they should be thought of in “absolute” terms. By attempting to determine the extent of the significance in the relationship between the x and y variables, manually, given 30 samples, the task could be quite tedious and time-consuming.

Today, however, new and improved statistical software are allowing us to leap frog from hypothesis to the statistical significance of its variables at lightning speed. For instance, Com 968-42 (32) Statistics for Social Research II has introduced to us the latest version of Microsoft Excel, and with it, we can now find a correlation coefficient having to do the very beautiful, but tedious math.